TouchKit Touch Panel
User manual v 3.1

CONTENT

Chapter 1.Touch Panel Controller

This touch panel controller provides the optimistic performance of analog resistive touch panels for four-wire, five-wire & eight-wire models. It communicates with PC system directly through RS232, PS/2 or USB connector. user can see how superior the design is in sensitivity 、accuracy and friendly operation. The touch panel driver emulates mouse left and right button function and supports operation systems including Microsoft Windows 95/98/ME/2000/NT/XP/XP Tablet PC Edition, Windows CE 2.12/3.0/. NET, Linux, iMac and DOS.

1.1 Controller

Interface	RS232	USB	PS/2
4-wire	Ready	Ready	Ready
5-wire	Ready	Ready	Ready
8-wire	Ready	Ready	Ready

1.2 Specifications and Features

Specifications for Touchkit controller.

Specifications	
Power requirements	+5VDC (Maximum 100mA, typical 70mA, 50mV peak to peak maximum ripple)
Operating temperature	0 to 50 ℃
Storage Temperature	-40 to 80 ℃
Relative Humidity	95% at 60 ℃
Protocol	RS232 Model: 9600 bauds, None parity, 8 data bits, 1 stop bit USB Model: USB 1.1 Low speed PS/2 Model: PS/2 mouse
Resolution	2048 X 2048
Report rate	RS232 Model: Max. 160 points/sec USB Model: Max. 160 points/sec PS/2 Model: Max. 140 points/sec
Response time	Resistive: Max. 35 ms
Pin out definition	4 wire model: X, Y, X, Y 5 wire model: UL, UR, COM, LR, LL 8 wire model: X+, X+ref, Y+, Y+ref, X- , X-ref, Y-, Y-ref
Panel resistance	4, 8 wire resistive model: 300 ~ 900 ohm (pin to pin on the same layer) 5 wire resistive model: 50 ~ 200 ohm (pin to pin on drive layer)
Regulatory Approvals	FCC-B, CE

Features for Touchkit software

Features	
Calibration	1. Fast full oriental 4 points position 2. Support monitor / display rotation 3. Support multiple monitor / display
Compensation	Accuracy 25 points linearity compensation.
Draw Test	Position and linearity verification
Controller Setting	1. Support multiple controllers 2. Dynamical add / remove controllers 3. Change Controller interface without reboot.
Language	Support 8 languages for Windows
Mouse Emulator	1. Right / Left button emulation 2. Normal / Click on touch / Click on release mode 3. Cursor visibility
Sound Notification	1. No sound 2. Touch Down 3. Lift Up 4. Frequency adjustment 5. Duration adjustment
Double Click	1. Configurable double click speed 2. Configurable double click area
OS support	1. Windows 95/98/ME/NT4/2000/XP/ Windows XP Tablet PC Edition 2. Windows CE 2.12, 3.0, .NET 3. Linux (X Window Version: 3, 4 Red Hat 6.0 ~ 8.0 Mandrake 5.0 ~ 9.0) 4. iMac. OS9 5. MS-DOS: Support display resolution: 320x200, 640x200, 640x350, 640x480, 800x600, 1024x768 and 1280x1024
COM port support	1. Support COM 1 ~ COM 256 for Windows and Linux 2. Support COM 1 ~ COM 8 for DOS

Chapter 2. Installing and using TouchKit

2.1 For Windows 95 / 98 / ME / NT4

TouchKit is software, which contains **drivers** of the touch panel controllers for the specified communication connectors, RS232, PS/2 and USB, and the other **two utilities**:

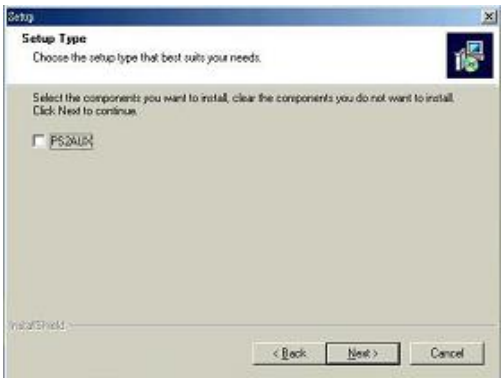
- **Touch Tray support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons by this utility.

- **Configuration support**
  The calibration and draw test of touch panel are done by this utility. Besides, user can add or remove for new RS-232, PS/2 or USB touch panel devices.

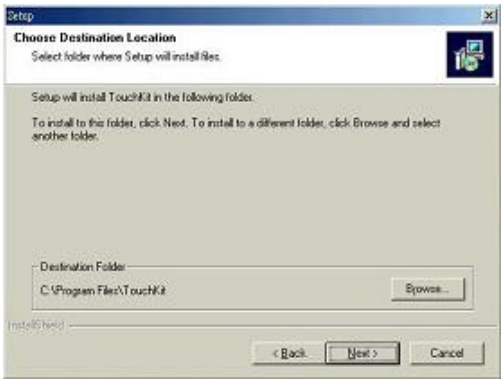
Follow these steps to install ***TouchKit.***
(An example for Windows 98.)

1. Put the ***TouchKit*** CD to CD-ROM.
2. Change directory to “Win9X_ME.”
3. Double click the Setup.exe, then windows starts to run the installation program.
4. Just click **[Next>]** button to continue installation.

5. Then check the check box if PS/2 touch controller is to be installed. The default Is unchecked. Then Press **[Next >]** to continue installation.

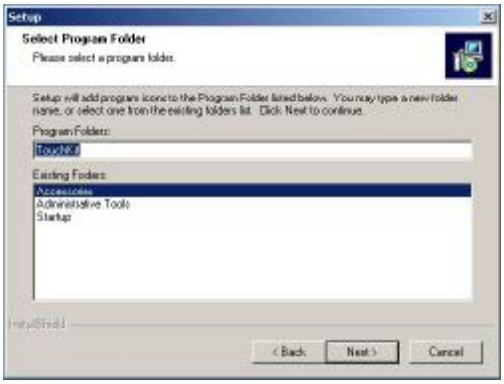


6. Select the appropriate folder where set-up files will be installed. Then Press **[Next >]** to continue installation.



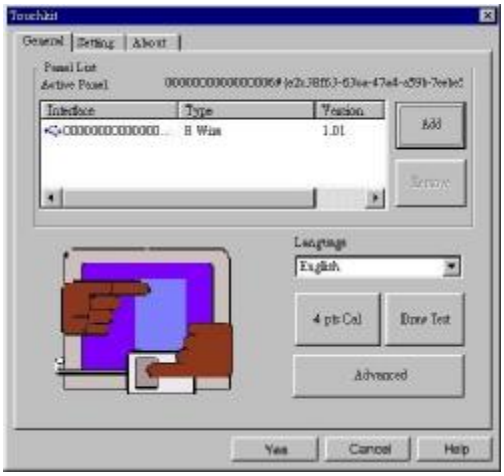
Press **[Next>]** to continue.

7. Then type in the name of program folder for TouchKit or press **[Next>]** to continue. There will be a default name for it.



8. Windows is copying files to disk and the setup is complete. It will request re-boot computer. Press **[Yes>]** to re-boot immediately or **[No>]** to re-boot later. The installation will not be finished until system re-boot.

9. Setup is complete. After TouchKit installation, the USB device will be found automatically as soon as it was plugged into the computer. Then user can see the new device on the application program window. And, the program will remove the USB Device automatically as soon as it was unplugged. **(USB device is not supported for Win95 / NT4)**



2.2 For Windows 2000

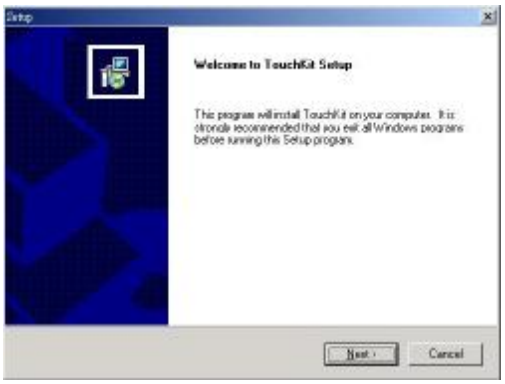
TouchKit is software, which contains **drivers** of the touch panel controllers for the specified communication connectors, RS232, PS/2 and USB, and the other **two utilities**:

- **Touch Tray support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons by this utility.

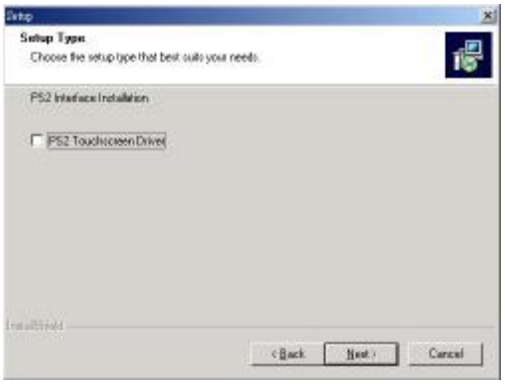
- **Configuration support**
  The calibration and draw test of touch panel are done by this utility. Besides, user can add or remove for new RS-232 or PS/2 touch panel devices.

Follow these steps to install ***TouchKit.***

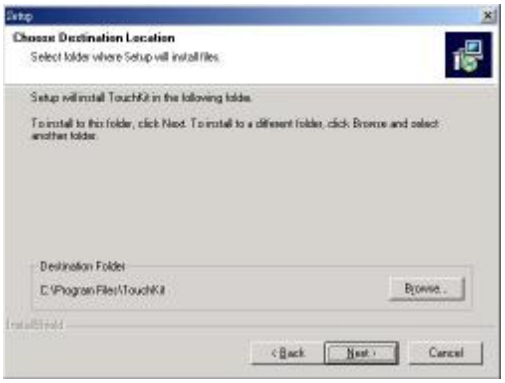
1. Put the ***TouchKit*** CD to CD-ROM.
2. Change directory to “Win2000_XP.”
3. Double click the Setup.exe, then windows starts to run the installation program.
4. Just click **[Next>]** button to continue installation.



5. Then check the check box if PS/2 touch controller is to be installed. The default Is unchecked. Then Press **[Next >]** to continue installation.

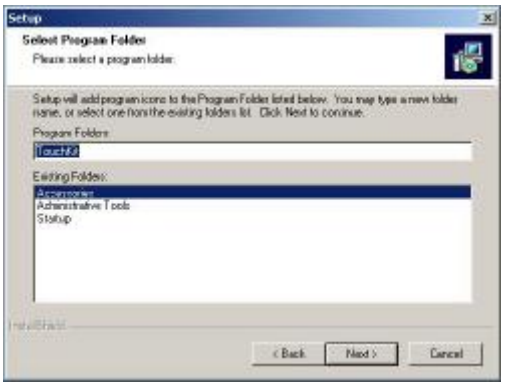


6. Select the appropriate folder where set-up files will be installed.



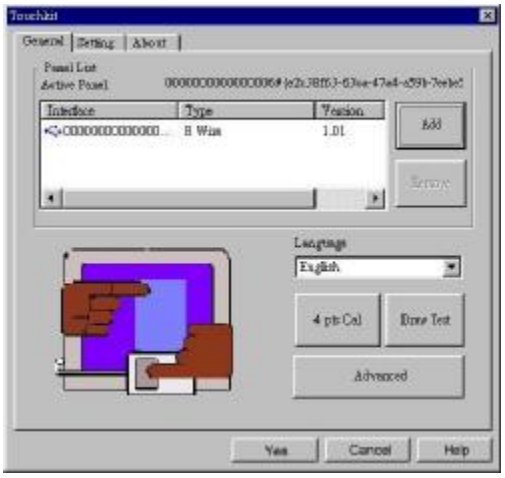
Press **[Next>]** to continue.

7. Then type in the name of program folder for TouchKit or press **[Next>]** to continue. There will be a default name for it.

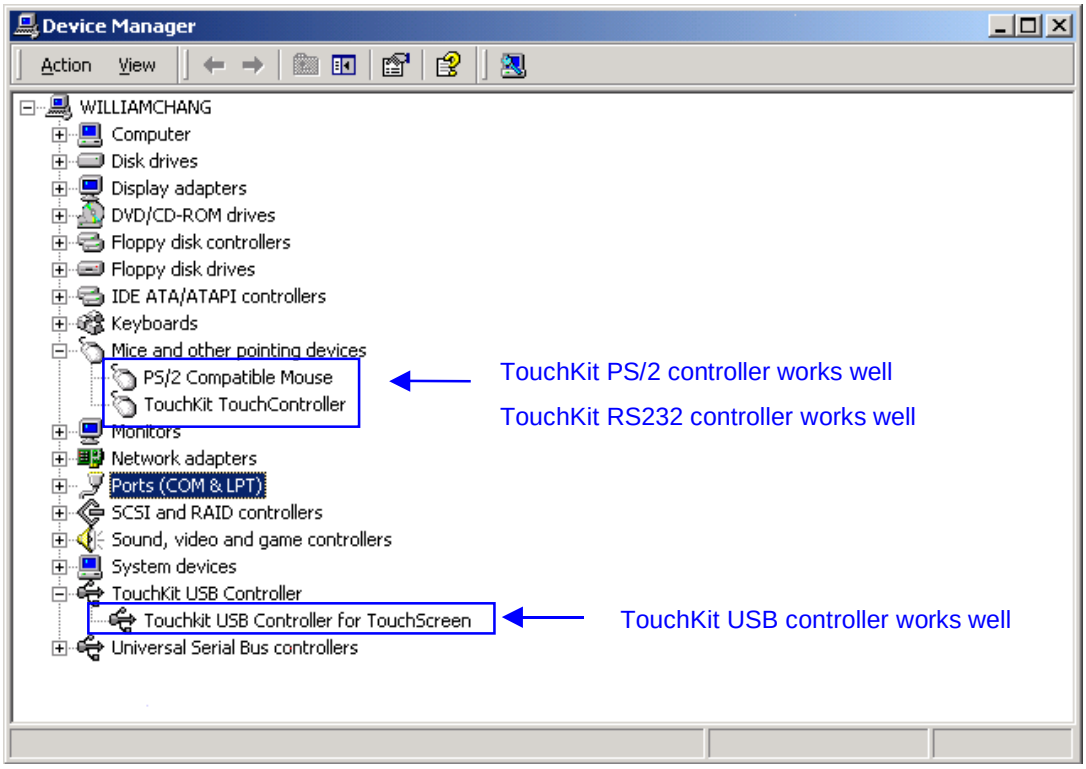


8. Windows is copying files to disk and the setup is complete. After finishing the installation, if PS/2 touch controller is installed, it needs to reboot the computer.

9. Setup is complete. After TouchKit installation, the USB device will be found automatically as soon as it was plugged into the computer. Then user can see the new device on the application program window. And, the program will remove the USB Device automatically as soon as it was unplugged.



10. User can check the situation of controllers in Device Manager. If the controller is set up well, there will be messages as the following picture.



2.3 For Windows XP / XP Tablet PC Edition

TouchKit is software, which contains **drivers** of the touch panel controllers for the specified communication connectors，RS232、PS/2 and USB，and the other **two utilities**.

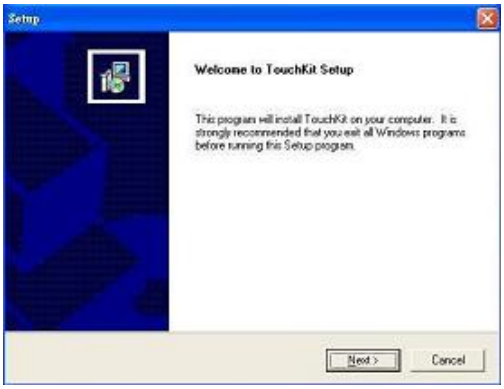
The 2 utilities are as follows:

- **Touch Tray support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons by this utility.

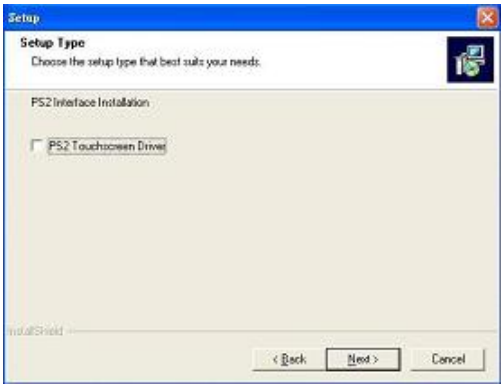
- **Configuration support**
  The calibration and draw test of touch panel are done by this utility. Besides, user can add or remove for new RS-232 or PS/2 touch panel devices.

Follow these steps to install ***TouchKit.***

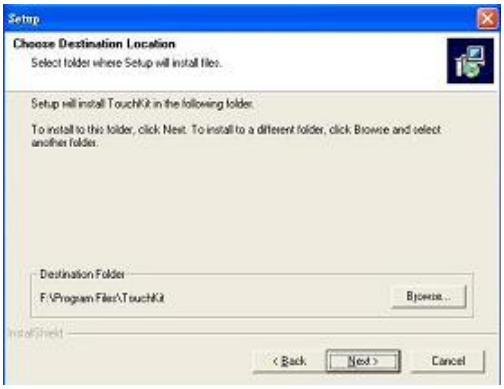
1. Put the ***TouchKit*** CD to CD-ROM.
2. Open the “Win2000_XP” directory.
3. Double click the Setup.exe, then windows starts to run the installation program.
4. Just click **[Next>]** button to continue installation.



5. Check the check box if PS/2 touch controller is to be installed. The default setting is unchecked. Then Press **[Next >]** to continue installation.

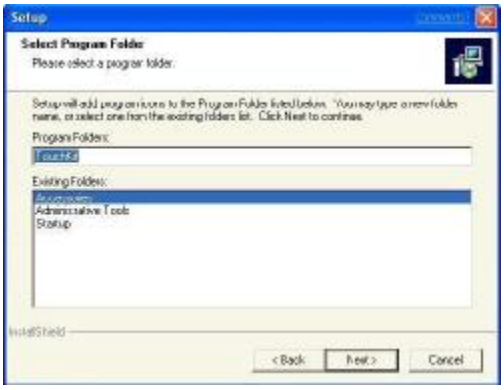


6. Select the appropriate folder where set-up files will be installed.



Press **[Next>]** to continue.

7. Then type in the name of program folder for TouchKit or press **[Next>]** to continue. There will be a default name for it.



During Installation, the Touchkit controller driver will be installed automatically. Windows XP will prompt a warning message before driver certificated. Now, Press **[Continue>]** to continue installation.

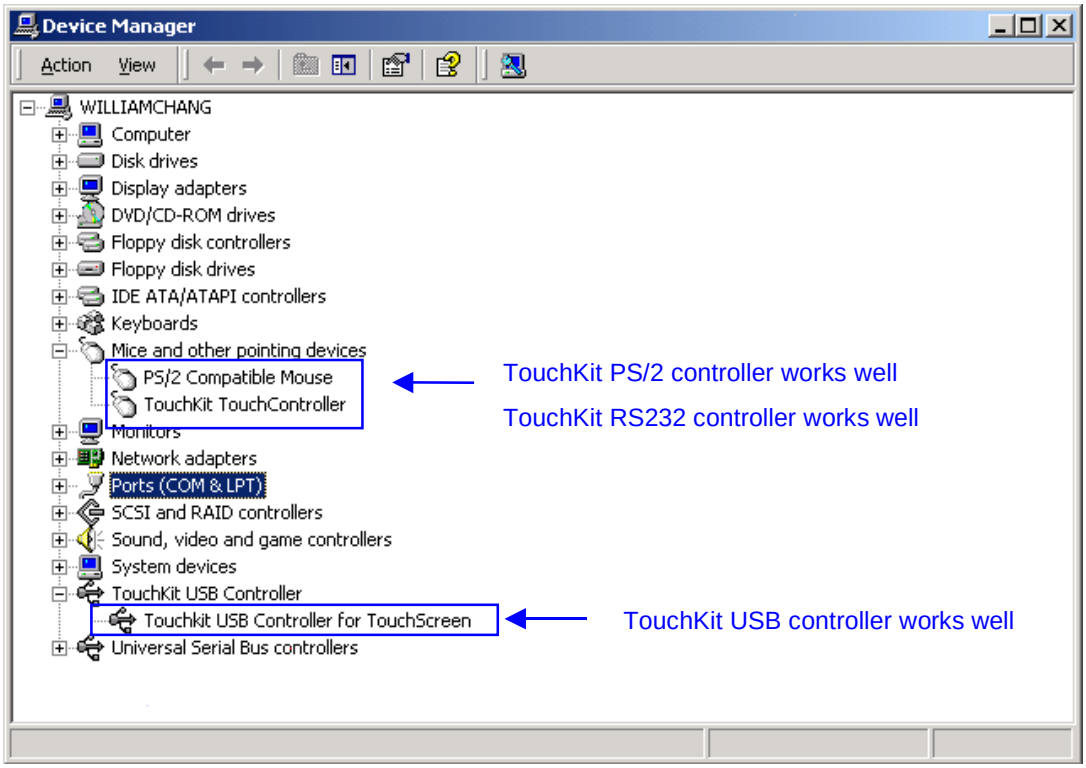
8. Windows is copying files to disk and the setup is complete. After finish the installation, if PS/2 touch controller is installed, it needs to reboot the computer.

9. After Touchkit installation, Unplug and plug the USB touch controller into the computer, Hardware wizard finds this hardware, Press **[Next>]**,

It will search the proper driver for the Touchkit controller device and install it automatically.

After the driver is installed, Press **[Finish>]** to complete the USB device installation.

10. User can check the situation of controllers in Device Manager. If the controller is set up well, there will be messages as the following picture.



2.4 For Windows CE2.12/3.0

TouchKit is software, which contains **drivers** and configuration & right button utilities of the touch panel controllers for RS232 and USB on x86 CPU & Windows CE operation system.

The 2 utilities are as follows:

- **Configuration support**
  The calibration and draw test of touch panel are done by this support.

- **Right button support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons by this utility.

1. There are totally 5 files in the TouchKit for Windows CE directory.
2. Follow these steps to install TouchKit for Windows CE.

   TouchKit.dll → driver
   Touch32ex.dll → specific dynamic linking library
   TouchTray.exe → right mouse support
   TouchKit.exe → Configuration Utility
   TouchKit.reg → information that will be added to registry

3. Make sure that Windows CE has the driver of serial ports.
4. While building Windows CE, user has to assign TouchKit.dll、Touch32ex.dll、TouchTry.exe and Touchkit.exe to appropriate directory.
5. Note: TouchTray.exe is the file of the Right Mouse Utility. It has to be started with computer booting. So, put this file to appropriate directory to satisfy this specific request.
6. Add some registry value as the content of TouchKit.reg .
7. Now, build Windows CE with this touch panel driver and utilities.

Now, user can boot this Windows CE version on specific device. The right mouse button utility will be emulated while computer booting and the touch panel driver is also ready.

2.5 For DOS

TouchKit is software, which contains **drivers** of the touch panel controllers for RS232 and PS/2，and the other **two utilities**:

- **Configuration support**
  The calibration and draw test of touch panel are done by this utility.

- **Right button support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons with this utility. This utility supports only video mode 3.

Follow these steps to install ***TouchKit.***

1. Put the ***TouchKit*** CD to CD-ROM.
2. Change directory to "<CD-ROM drive>:\DOS\"
3. Execute the installation program, "install.bat"

   For example:

syntax: install <path of destination directory>

   ```
   E:\DOS>install c:\xyz

   Destination C:XYZ\ does not exist; shall I create it? (Y/n)
   Change directory to C:\XYZ\
   Copy files...
   Copy files...Done
   Append settings to C:\AUTOEXEC.BAT...
   (Original C:\AUTOEXEC.BAT is saved as*.TKT)
   Do you want to activate Right Button Tool? (Y,N)
   ```

4. Reboot computer.

2.6 For Linux

Tested distributions:

- Red Hat 7.0 kernel version 2.2.16,
- Red Hat 7.1 kernel version 2.4.2,
- Red Hat 7.2 kernel version 2.4.7,
- Red Hat 7.3 kernel version 2.4.18-3,
- Red Hat 8.0 kernel version 2.4.18-14,
- Mandrake 8.0 kernel version 2.4.5
- Mandrake 8.1 kernel version 2.4.8
- Mandrake 8.2 kernel version 2.4.18
- Mandrake 9.0 kernel version 2.4.19

TouchKit is software, which contains **drivers** and 2 utilities of the touch panel controllers for RS232、PS/2 and USB on Linux operation system. The 2 utilities are as follows:

- **Configuration support**
  The calibration and draw test of touch panel are done by this utility.

- **Right button support**
  This is utility for emulating the right and left button of mouse through controlling touch panel. User can toggle between right or left mouse buttons by this utility.

Before install ***TouchKit*** for Linux, please make sure that (1) user have root privilege and that (2) X window system has been configured correctly.

Follow these steps to install ***TouchKit*** for Linux.

1. Put the ***TouchKit*** CD to CD-ROM and mount it on Linux file system; e.g. with command: “mount /dev/cdrom /mnt/cdrom”
2. Change directory to “/mnt/cdrom/Linux/Other Version”
3. Execute script “**touchkit.setup.sh**“ with command “**sh touchkit.setup.sh**”
4. The script will extract files to temporary directory and start installing:

```
(*) Extract files from [touchkit.setup.sh] to [/tmp/touchkit]
(*) Start installer [/tmp/touchkit/setup]

=== TouchKit for Linux Installer ===

(Step 1) Check Packages Installed
 [Common]
 make                    OK (make-3.79.1-5)
 tcl                   OK (tcl-8.3.1-46)
 tk                    OK (tk-8.3.1-46)
[Required for Full Mode]
 gcc                    OK (gcc-2.96-54)
 glibc-devel              OK (glibc-devel-2.1.92-14)
 XFree86-devel              OK (XFree86-devel-4.0.1-1)
 kernel-source              OK (kernel-source-2.2.16-22)
```

The first step is to check if software configuration is ready to install and to utilize *TouchKit*. Installation will abort if some **Common** packages are missing; please reinstall *TouchKit* after all those packages being installed.

5. Press '**1**' or '**2**' followed by 'enter' to select installation mode depending on the communication interface of *TouchKit* controller.

```
(Step 2) Select Installation Mode
(Q) Which installation mode do you prefer?
 (1) Compact Mode, (only RS232 and PS/2) or
 (2) Full Mode (RS232, PS/2 and [USB])
```

6. If **Full Mode** is selected, installer starts building process.

```
1
(I) [Full Mode] selected

(Step 3) Rebuild TouchKit
for n in include driver utility xf86drv diag usb; do            \
        make -C $n || exit 1;           \
done
        .
        .
        .
: '+-----------------------------------+'
: '|  Build-All Complete Successfully  |'
: '+-----------------------------------+'
```

7. After building process completes successfully (or if **Compact Mode** is selected), *TouchKit* will be installed into system; user must restart X window system to see the change.

```
(Step 4) Install TouchKit
(*) Install USB module [/lib/modules/2.2.16-22/usb/tkusb.o]
(*) Install touch panel daemon [/usr/bin/tpaneld]
(*) Install configuration utility [/usr/bin/touchcfg]
(*) Install XFree86 driver [/usr/X11R6/lib/modules/input/touchkit_drv
(*) Generate uninstall script [/usr/bin/uninstall_TouchKit]
(*) Update system starting up script [/etc/rc.d/rc.local]
(*) Update XFree86 configuration [/etc/X11/XF86Config-4]
+--------------------------------------+
|  Installation Complete Successfully  |
+--------------------------------------+
(I) Start TouchKit touch panel daemon
(I) Start USB module

(I) Please RESTART your X Window Server.
```

8. For install Redhat 8.0, please repeat the step 1~ 6 as the same as other version of Linux. The difference between Redhat 8.0 and other version is the install directory changed to "/mnt/cdrom/Linux/Redhat8". Execute script "**touchkit.setupr8.sh**" with command "**sh touchkit.setupr8.sh**". Two of software packages should be installed first, since they are not for default installation when installing OS.
   (1) sharutils-XXX.rpm
   (2) XF86Free-develXXX.rpm

   User can find these packages in disc3 and disc2 in RedhatLinux 8.0 distribution. Also, user can find these packages in this touchkit driver Redhat8.0 subfolder.

2.7 For iMac

TouchKit is software, which contains **drivers** of the touch panel controllers for USB on iMAC operation system，and the other **two utilities**:

- **Configuration support**
  The calibration and draw test of touch panel are done by this utility.

Follow these steps to install ***TouchKit.***

1. Extract the “iMac.hqx” file to “TouchKit_Installer” with StuffItExpander.
   Double click “TouchKit_Installer” file to start installing.

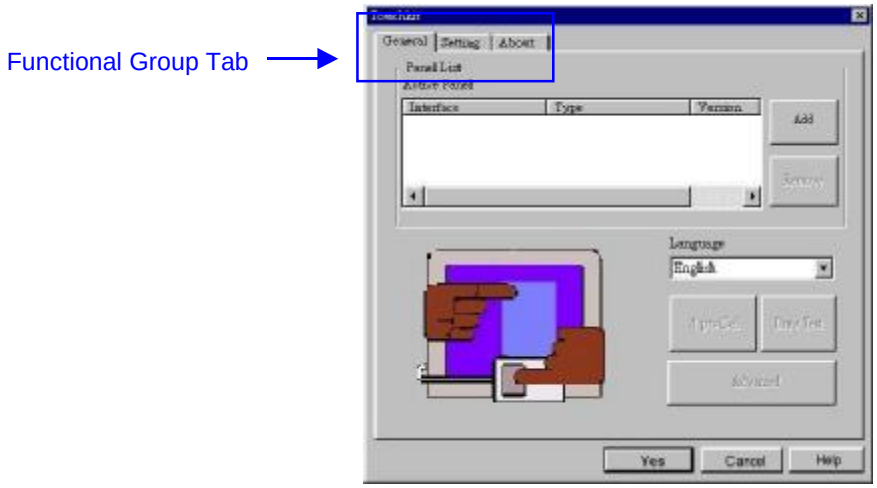
2. Press <Install> button to continue.

3. Select directory to install utilities and press <Open> button to continue.
   Installation will complete in few seconds.

Chapter 3. Configuration Utility and Right Button Emulator

3.1 For Windows 95/98/ME/NT4/2000/XP/XP Tablet PC Edition

There are three property pages in TouchKit utility, and they are **General**, **Setting** and **About**. Each property page contains different functions for users to do the adjustments. Therefore, users can easily manage all the TouchKit controllers through TouchKit Utility.

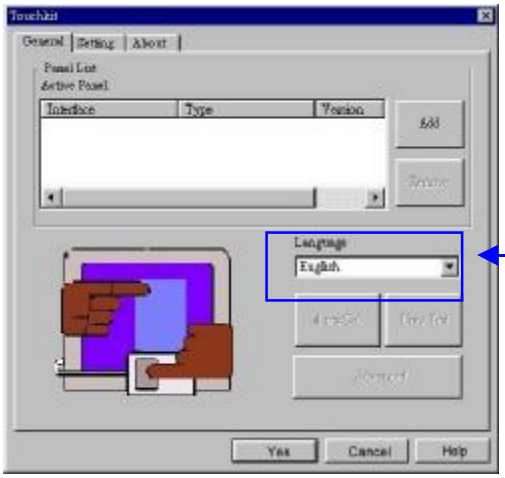


General

General property page contains the functions of **language selection**, **devices add/ remove**, **4 points calibration**, **Draw test** and **advanced**. Furthermore, there are two functions in the **Advanced**, they are **25 points calibration** and the support of **multiple monitors**.

<Language>

TouchKit supports multi-language user interface. User could select native language that is compatible to operation system support. For example, if the operation system is a traditional Chinese version, user could see the normal display words under the traditional Chinese and English mode. There are eight different languages, **English**, **Traditional Chinese**, **Simplified Chinese**, **French**, **Spanish**, **German**, **Japanese** and **Korean**, supported in this feature of TouchKit.

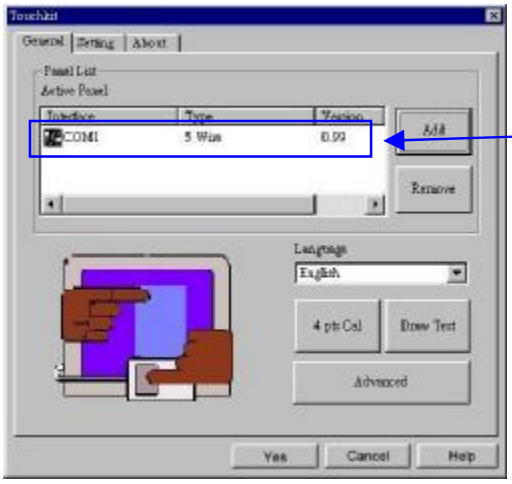


Select the compatible language first or user may not see the normal display of each button.

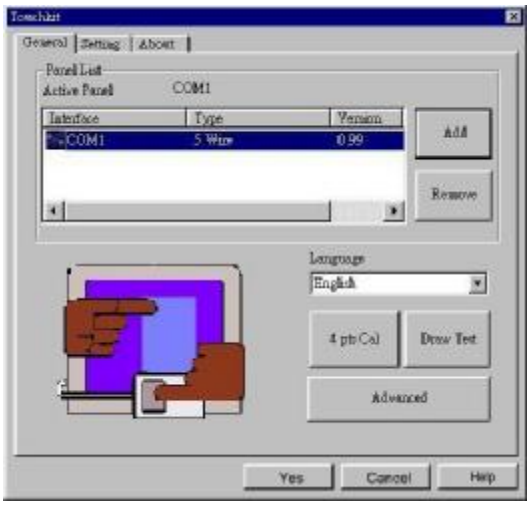
<Add> & <Remove>

Please check the touch panel devices (including its controller) are equipped well, then click **[Add]** button to add all of those RS-232 and PS/2 components to the **<Panel List>** dialogue box.

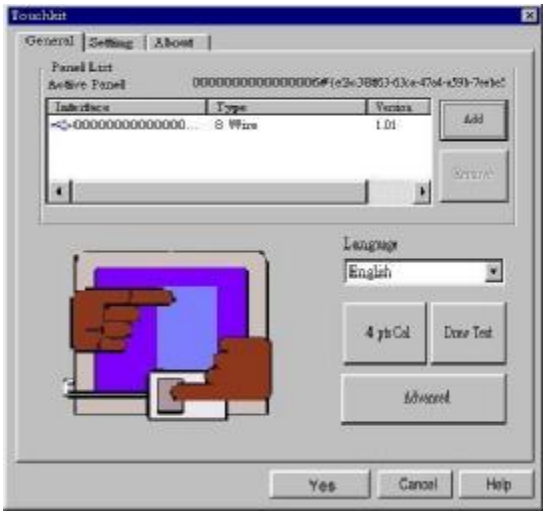
There is one devices found. Just Press **[Yes]** to continue.



The controller is displayed on the Panel List box. user can get the information of interface、type、firmware version and baud rate for each controller.
Select one device after import more than one device at the panel list window.
The one selected will activate the panel, and remember to do the calibration before starting to use touch panel.



But, for hot-swapping USB touch controller, it will be added automatically as soon as it was plugged into the computer. Then user can see the new device on the application program window. And, the program will remove the USB touch controller automatically as soon as it was unplugged.



There are three buttons, **< 4pts Cal > <Draw Test> <Advanced>**, at the lower section of the **<General>** property page.

<4pts Cal >

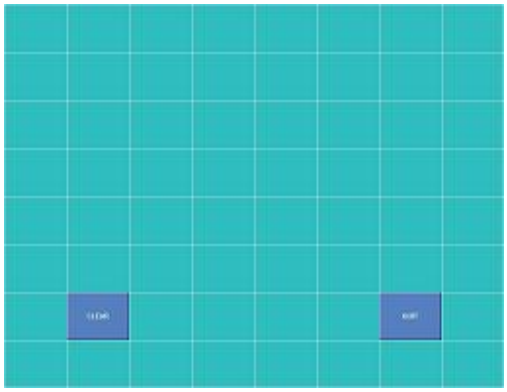
Correct 4 point locations on screen with the panel. Press **[4pts Cal]**, screen displays as follows.

Touch the blinking symbol on panel until beep or stop blinking.

<Draw Test>

Test the drawing position related to the display screen on panel.

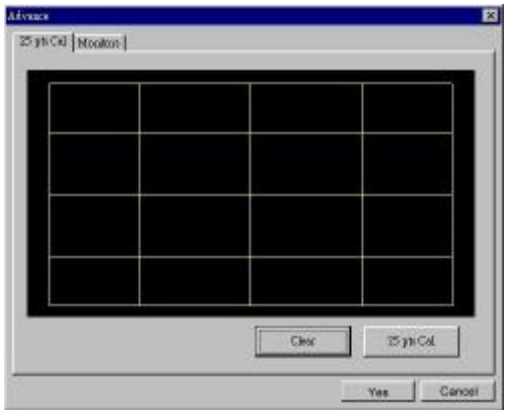
Click on the **[Draw Test]** button. There will be a squared blue display showing.



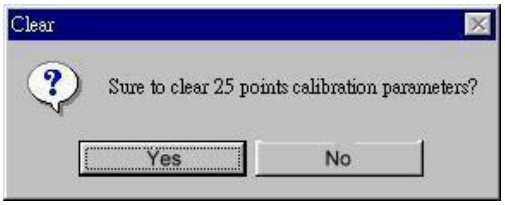
In drawing test window, user can click **<Clear>** button to clear the window. Also, User can Click **<Quit>** or press mouse right button to quit from the drawing test. If no “touch action” happen within minutes, it will quit from the draw test window automatically. In drawing test window, user can verify the panel linearity, calibration capability, and drawing line quality.

<Advanced>

Touchkit provide more accuracy 25 points calibration for touch sensor. In addition, Touchkit supports multiple monitors configuration in Windows 98/ME/2000/XP. Also, Touchkit provide controller setting for capacitive touch sensor. If the capacitive controller is selected, a capacitive setting property page appears on the advanced sheet. In general case, it does not need to do 25 points calibration other then bad linearity sensor.



Press **[Clear]** to clear the previous calibration records.



Press **[Yes]** to clear previous records.
The record will become default record.

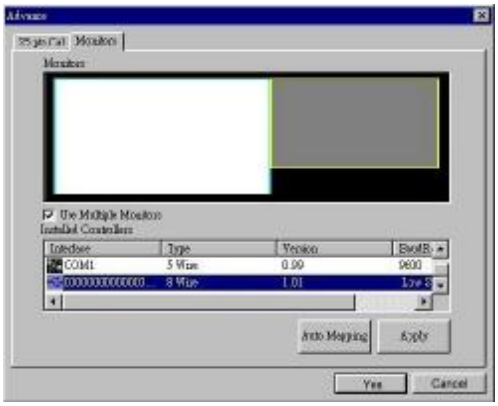
Press **[25ptCal]** to do 25 points calibration. Correct 25 point locations on screen with the panel.

Touch the blinking symbol on panel until beep or stop blinking.

After the calibration, the new record will overwrite the old one.

<Multiple Monitors>

To configure the mapping relationship between the monitors and the touch panels, select the monitor page as below.



Set the check box (Use Multiple Monitors) to enable multiple monitors mapping. Uncheck this box will disable multiple-monitor configuration, and all of the touch panel controllers will be mapped to the primary monitor. The gray shadow area is the monitor mapped the selected controller/panel. The button **[Auto Mapping]** is used to find the mapping relationships between the monitors and touch panel controllers. Press the **[Auto Mapping]**, the software will guide the user to touch the corresponding monitor to obtain the mapping relationship.

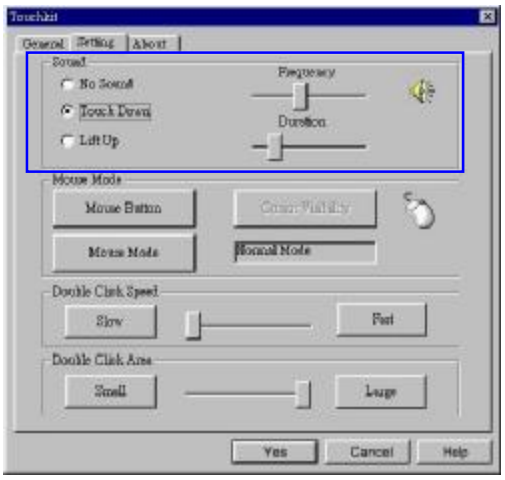
After finish monitor mapping, Press **[Apply]** to apply the mapping relation.

Setting

There are three functional groups in **Setting** property page, and at the upper section of the property page is **sound option;** at the middle section is **Mouse Mode;** and at the lower section is **Double Click Adjustment**.

The **Sound** options provide user the click feedback while touching the panel.
Select preferred option first.

Sound options →



<No Sound>

User could choose to make no sound while using the touch panel.

<Touch Down>

The system will make a sound while touching the panel.

<Lift Up>

The system will not make any sound until finger leaves the touch panel.

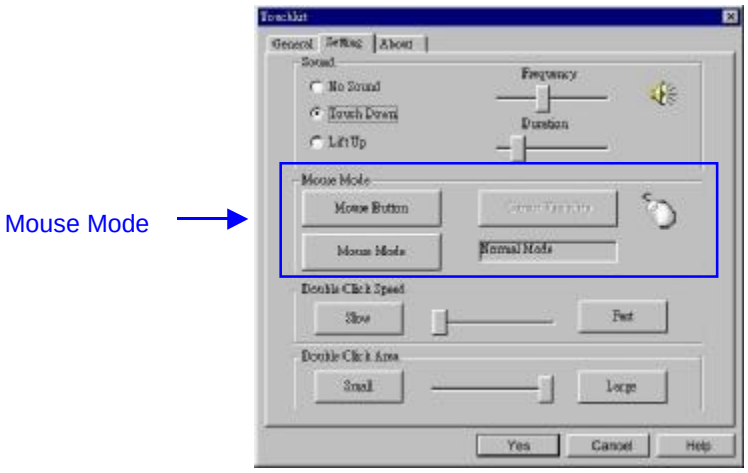
<Frequency>

Sound frequency, drag the cursor from left to right is low to high.

<Duration>

Sound duration, drag the cursor from left to right is short to long.

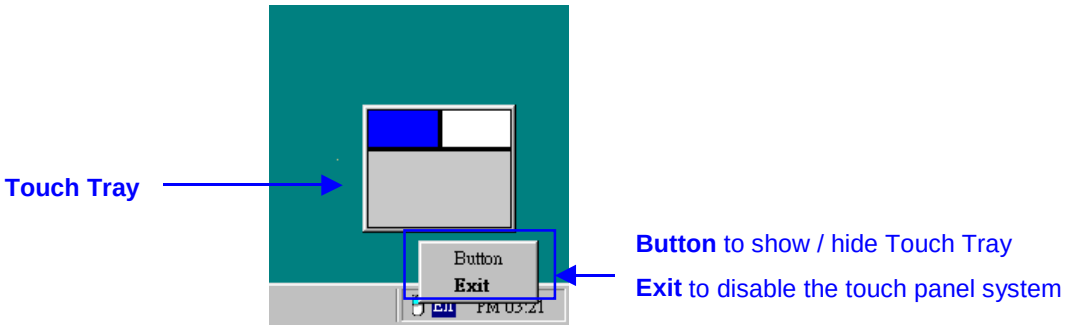
The **Mouse Mode** provides user different operating options. They are as follows:



<Mouse Button>

Click it to show/hide ***Touch Tray*** on the right bottom corner of the desktop. The touch panel system starts with the computer booting, and a mouse Icon shows in the taskbar.

User can choose show or hide ***Touch Tray*** from the mouse icon in the taskbar. Just right click the mouse icon, there will be a pop-up box. Using the **Button** to choose show or hide, and if user wants to disable the touch panel system, choose **Exit.**



Change **right / left** button by clicking the upper small rectangular box of Touch Tray. Blue area expresses what button has been selected.

<Mouse Mode>

There are three kinds of mouse mode user could choose,

Normal Mode:

It provides all the mouse functions, including the dragging function.

Click on Touch:

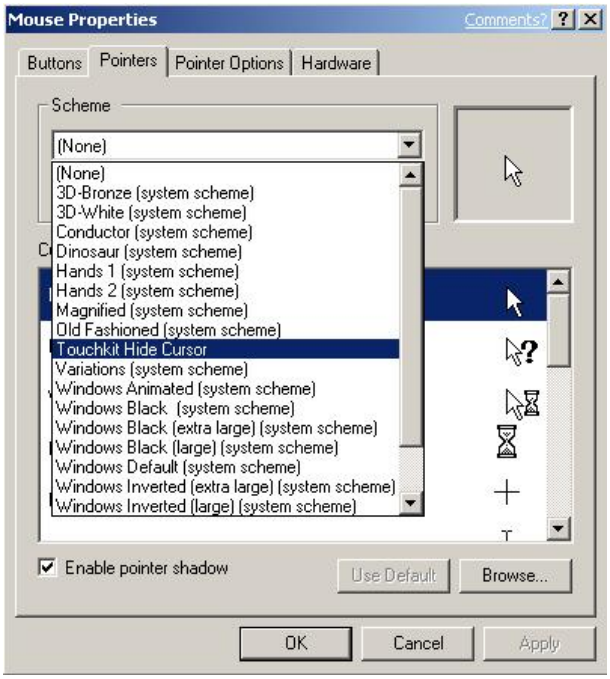
Click action is executed as soon as user touches the panel.

Click on Release:

Click action will not be executed until finger leaves the panel.

<Cursor Visibility>

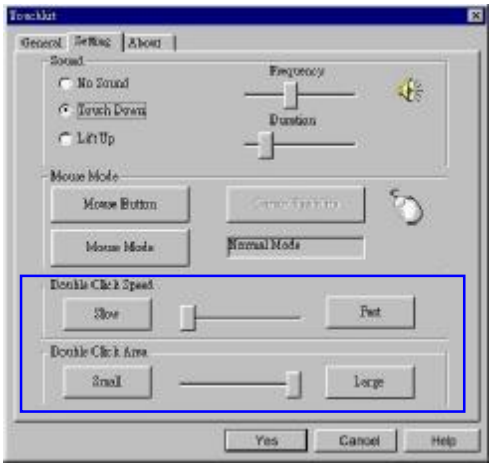
Cursor visibility function provides user to hide the cursor in the display. Please go to **Start / Control Panel / Mouse / Pointers / Scheme**, and choose TouchKit Hide Cursor. Press **[Apply]** to make setting change, and press **[OK]** to escape the property page.



If user wants to cancel the function of TouchKit Hide Cursor, do the steps again and choose the other scheme.

The **Double Click adjustment** provides user to set up the tolerance while double clicking. They are as follows:

Double Click Adjustment →



<Double Click Speed>

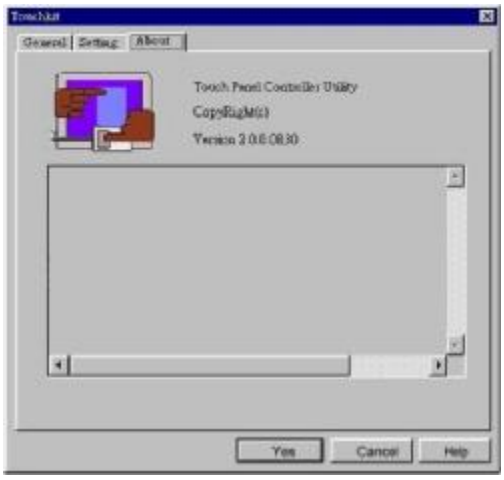
Double Click Speed is the double click response time for Windows system. User can adjust the proper double click for easy double click by touch panel.

<Double Click Area>

Each one touch has its own touch tolerance once someone may not fix in one point. So if user set the Double Click Area to **<Smaller>**，the panel will be very sensitive about micro-move while user wants to fix on a point. If user set it to **<Larger>**， it tolerates the larger touch point movement while user want to point at a fixed position.

About

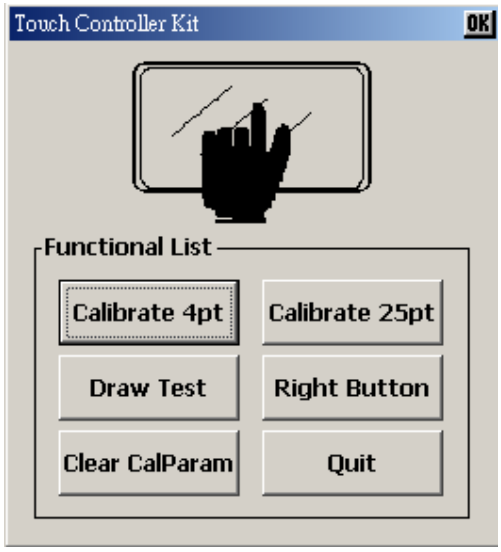
Information about ***TouchKit***.



3.2 For Windows CE2.12/3.0

Double click TouchKit.exe file to execute it.

There are 6 buttons, **[Calibrate 4pt]**, **[Draw Test]**, **[Clear CalParam]**, **[Calibrate 4pt]**, **[Right Button]** and **[Quit]**, on the AP.



<Calibrate 4pt>

Correct 4 point locations on screen with the panel. Press on [Calibrate 4pt], screen displays as follows.

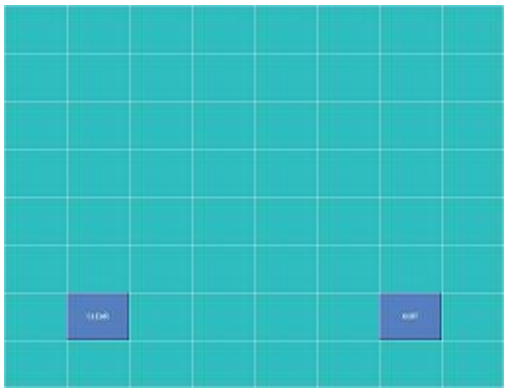
Touch the blinking symbol on panel until beep or stop blinking.

There will be a message window after this correction.

<DRAW TEST>

Test the drawing position related to the display screen on panel.

Click on the **[Draw Test]** button. There will be a squared blue display showing.



Try to write or draw on it to verify the touch position.

Press **[CLEAR]** for cleaning touch screen, and press **[QUIT]** to exit <Draw Test>.

<Clear CalParam>

Press **[Clear CalParam]** to clear the previous calibration records. The record will become default record.

.

<Calibrate 25pt>

Press **[Calibrate 25pt]** to execute 25 points calibration. Correct 25 point locations on screen with the panel.

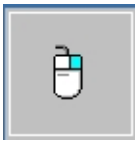
Touch the blinking symbol on panel until beep or stop blinking.

After the calibration, the new record will overwrite the old one.

<RIGHT BUTTON>

Right mouse emulator. The default value is “on”.
Click **[Right Button]** to close the right mouse emulator.
Right Button starts with the computer booting. A mouse Icon is located in the right corner of screen.

Click mouse right button; there will be a pop-up box. Select **Button**, then a squared box shows up.



Change right / left Button by click the icon on screen. Cyan area expresses what button has been selected.

After select the button, user can touch the panel to control mouse activities. Select / De-select files or Drag icons on screen, whatever the mouse behaves.

<Quit>

Exit TouchKit touch panel utility.

3.3 For DOS

The touch-sensitive area of the panel and touch–sensitivity both can be modulated through the configuration utility. Besides, the controller identification and device activated shall be done first.

After installation **TouchKit** and rebooting system, the driver will probe all communication devices by default. Execute "**TPANEL -?**" for more options.

```
TouchKit for DOS Version 1.00.02.0904

Test TKT1...no panel found
Test TKT2...no panel found
Test  PS2...Loopback OK

Read settings from PS2...OK
Driver installed
```

Note: If user attaches TouchKit controller to another communication port, please reboot computer.

To avoid confusing the end-user, touchkit driver use the "virtual TKT" port name instead of the "com" port name. In order version driver, touchkit driver parsers the "com1" and "com2" from the system environment. If the user needs another "com" port, for example "com5", all the end-user to do is set the environment variables as set COM1 = IOADDR, IRQ. However, this new driver package use "TKT" instead of "com".

This suit supports at most two serial ports; which are TKT1 (IO:0x3F8 IRQ:4) and TKT2 (IO:0x2F8 IRQ:3) by default. If bios settings differ (ex. COM1 is of IO addr 3E8 and IRQ 4), add one more line (before "TPANEL") in C:\AUTOEXEC.BAT to redirect:
SET TKT1=3E8 4

Also, If the user needs the controller at another serial port (for example,
"com5" where IO address is 4F8, IRQ is 4), it need to redirect the system environment variable by

SET TKT1 = 4F8 4

before launch "TPANEL.EXE" in the autoexec.bat

TouchKit for DOS also supports three Sound Modes: NONE, UP and DOWN. Please go to “C:\TouchKit\> tpanel.ini” to change the sound mode.

< tpanel.ini >

Beep=None 1322

〔promptBegin〕

TouchKit for DOS Version 1.00.02.0904

〔promptEnd〕

Beep = none|down|up [frequency]

none: no sound; keep silent
down: beep when you touch down
up: beep when you touch up

After saving new “tpanel.ini”, user can force the driver to reload the new “tpanel.ini” by executing “C:\TouchKit\>tpanel -r” Other adjustment can be checked by “C:\TouchKit\> tpanel -?”

There are three utilities: **TPDRAW**, **TP4PCAL** and **TP25PCAL** to calibrate touch panel. They all support extra command-line arguments such as "-g 1024x768" behind to specify screen resolution on action.

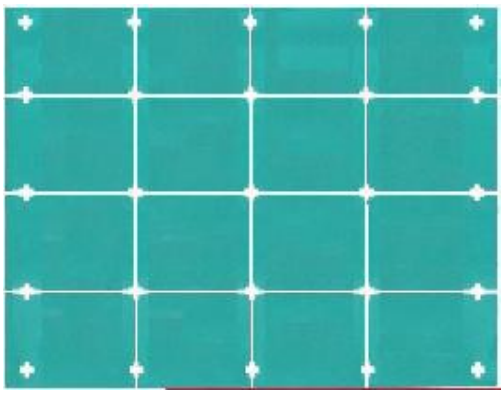
Resolutions supported: (use 640x480 by default)

320x200, 640x200, 640x350, 640x480, 800x600, 1024x768 and 1280x1024

TPDRAW

Test the drawing position related to the display screen on panel.

E.g. C:\> tpdraw tkt2



Try to write or draw on it to verify the touch position.

Press **<ESC>** button to exit.

TP4PCAL

Correct 4 point locations on screen with the panel.

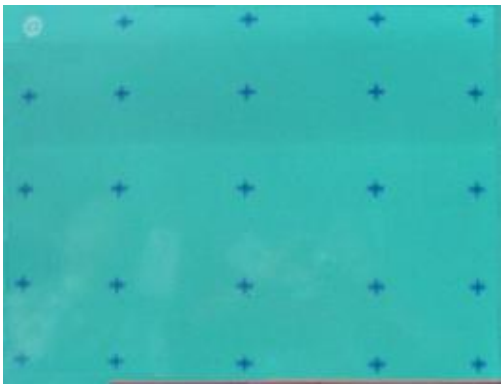
E.g. C:\> tp4pcal tkt2

Touch the blinking symbol on panel until beep or stop blinking.

TP25PCAL

Correct 25 point locations on screen with the panel.

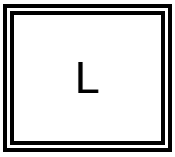
E.g. C:\>tp25pcal tkt2



Touch the blinking symbol on panel until beep or stop blinking.

After the calibration, the new record will overwrite the old one.

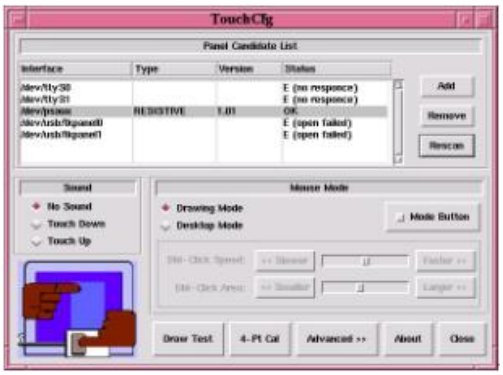
Right Button Emulator supports only video mode 3 and must start after the driver being installed; user may edit C:\>AUTOEXEC.BAT to toggle it on/off. If it is turned on a button will appear in the right-bottom corner of screen when mouse pointer is turned on.



The label of button, which is ‘L’ by default and becomes ‘R’ after button being clicked, indicates that next “touching down on panel” will be reported as “left (or right) mouse button click.”

3.4 For Linux

The touch-sensitive area of the panel and touch–sensitivity both can be modulated through the configuration utility. Besides, the controller identification and device activated shall be done first.
After installation **TouchKit** ，execute “**touchcfg**” to start the configuration utility.



The “Panel Candidate List”, which contains by default two RS232, one PS/2 and two USB devices, commands TouchKit driver which port to probe for controller. If a port is occupied by other device, e.g. /dev/ttyS1 (COM2) is used by a mouse, it is recommended to **[Remove]** /dev/ttyS1 from the list, since the probe process would interfere the operation of mouse.

If the user need another "com" port, for example "com3", please go to /etc/tpaneld.conf and add the sentence “Port = /dev/ttyS2“.

< tpaneld.conf >

MouseMode = DRAWING
DblClickSpeed = 18
DblClickArea = 30
RClickTool = 0
Sound = 0

Port = /dev/ttyS0
Port = /dev/ttyS1
Port = /dev/psaux
Port = /dev/usb/tkpanel0
Port = /dev/usb/tkpanel1

“Port = /dev/ttyS2 “ is added to use com3
“Port = /dev/ttyS3 “ is added to use com4

After checking that touch panel devices (included its controller) are equipped well, user may click **[Rescan]** button to scan all devices listed. If there are any additional connections excluding default connections, please press **[Add]** button to set specific settings.

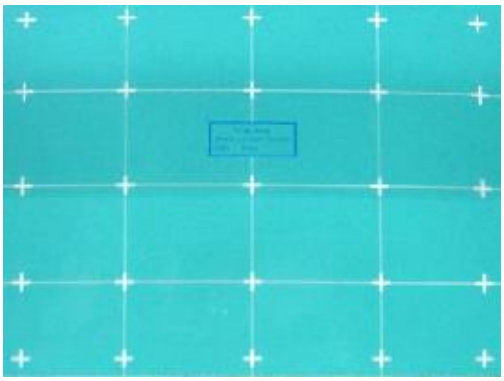
Select one device after import more than one device at the panel list window.
The one selected will activate the panel.

The Sound option provides user the click feedback while the click actions are done.

There are five buttons, **<Draw Test>**, **<4-PT Cal>**, **<Advanced>**, **<About>** and **<Close>**, at the lower section of the TouchCfg window.

<DRAW TEST>

Test the drawing position related to the display screen on panel.
Click on the **[Draw Test]** button. There will be a squared blue display showing.



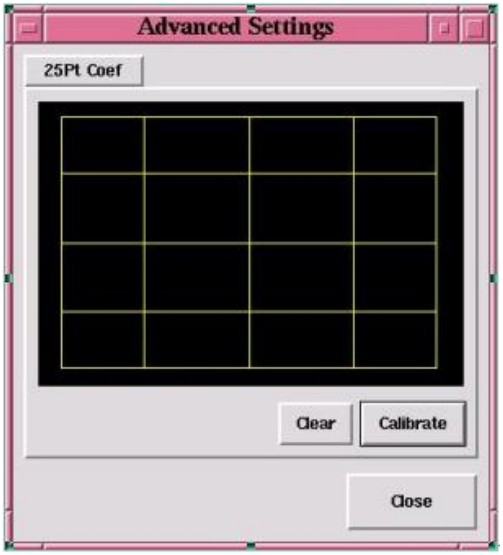
Try to write or draw on it to verify the touch position.
Press **<ESC>** to exit.

<4-PT Cal>

Correct 4 point locations on screen with the panel. Press **[4-PT Cal]**, screen displays as follows.

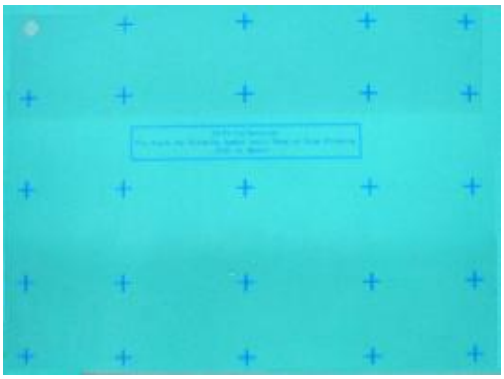
Touch the blinking symbol on panel until beep or stop blinking.

<Advanced>



Press **[Clear]** to clear the previous calibration records.
The record will become default record.

Press **[Calibrate]** to execute 25 points calibration.
Correct 25 point locations on screen with the panel.

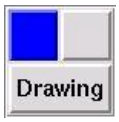


Touch the blinking symbol on panel until beep or stop blinking.

There will be a message window after this correction. After the calibration, the new record will overwrite the old one.

<Mode Button>

Check it or not to turn mouse button, which provides mode selection and right button emulation, on or off.



Change "**right / left** " button by click the button shown on the right-bottom corner of screen. Blue area expresses what button has been selected.

After select the button, user can touch the panel to control mouse activities. Select / De-select files or Drag icons on screen, whatever the mouse behaves.

<Double Click Speed>

Double Click Speed is the time of the touch panel response when someone double click it. Drag the cursor from left to right is slow to fast.

<Double Click Area>

Each one touch has its own touch tolerance once someone may not fix in one point. So if user sets the Double Click Area to **<Smaller>**，the panel will be very sensitive about micro-move while user wants to fix on a point. If user sets it to **<Larger>**， it tolerates the larger touch point movement while user wants to point at a fixed position.

<About>

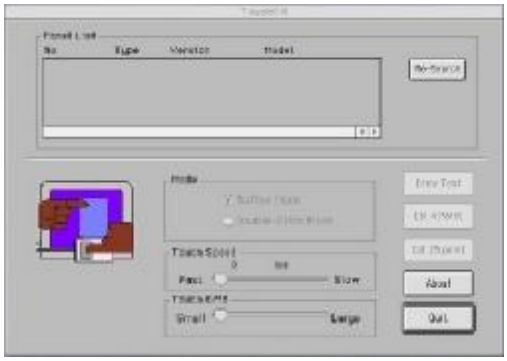
Information about ***TouchKit***.

<Close>

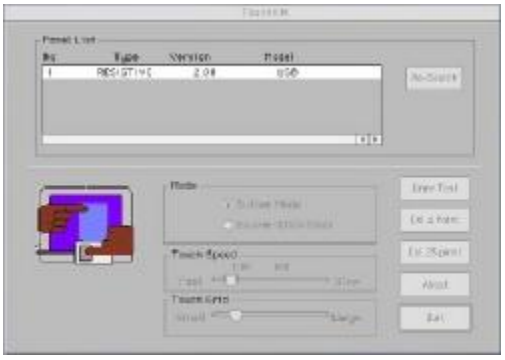
Close TouchKit touch panel utility.

3.5 For iMac

The touch-sensitive area of the panel and touch–sensitivity both can be modulated through the configuration utility. Besides, the controller identification and device activated shall be done first.
After installing **TouchKit** ，double click **[TouchKit Utility]** to start the ***TouchKit*** diagnosis window.



Please check touch panel devices (included its controller) are equipped well, then click **[Re-search]** button to add all of those components to the **< Panel List>** dialogue box.
There is one or more devices found.



The controller is displayed on the Panel List box. User can get the information of interface、type、version and model for each controller.

If user wants to change the communication port from the existed one to other，select it first and press **[Re-Search]**.
Select one device after import more than one device at the panel list window.
The one selected will activate the panel.

<Mode>

Touchkit provides two mouse modes in for iMac operation. They are **"Button"** and **"Double Click"** mode. **"Button"** mode is suitable for graphic drawing or hand writing. And, **"Double Click"** mode is suitable for desktop operation to easy use double click.

Press the **<Mode>** radio buttons to select which mode will be activated.

<Touch Speed>

Touch Speed is the time of the touch panel response when someone touches it. Drag the cursor from left to right is slow to fast.

<Touch Grid>

Each one touch has its own touch tolerance once someone may not fix in one point. So if user set the Touch Grid to **<Small>**，the panel will be very sensitive about micro-move while user wants to fix on a point. If user set it to **<Large>**， it tolerates the larger touch point movement while user wants to point at a fixed position.

There are five buttons, **<Draw Test> <Cal 4 point> <Advanced> <ABOUT> <QUIT>**, at the lower section of the <Panel List> window.

<DRAW TEST>

Test the drawing position related to the display screen on panel.

Click on the **[Draw Test]** button. There will be a squared blue display showing.

Try to write or draw on it to verify the touch position.

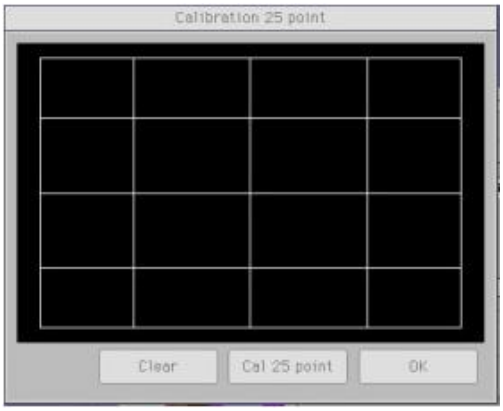
Press **[CLEAR]** for cleaning touch screen, and press **[QUIT]** to exit <Draw Test>.

<Cal 4point>

Correct 4 point locations on screen with the panel. Press **[Cal 4point]**, screen displays as follows.

Touch the blinking symbol on panel until beep or stop blinking.

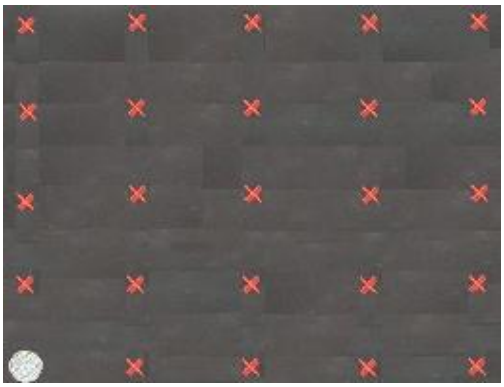
<Advanced>



Press **[Clear]** to clear the previous calibration records.

Press **[Yes]** to clear previous records. The record will become default record.

Then, press **[25ptCal]** to execute 25 points calibration. Correct 25 point locations on screen with the panel.



Touch the blinking symbol on panel until beep or stop blinking.

After the calibration, the new record will overwrite the old one.

<ABOUT>

Information about ***TouchKit***.

<QUIT>

Exit TouchKit touch panel calibration.

Chapter 4. MONITOR ROTATION SETTING

TouchKit driver package for Windows 98/Me/2000/XP provides two easiest ways to rotate the touch panel while the display is rotated.

- Rotating display by way of nVidia or ATI driver
- Rotating display by way of Pivot.

4.1 Rotating display by way of nVidia or ATI driver

1. After activating the rotation of nVidia or ATI driver, there will be one blinking symbol show as the following picture. Touch near the blinking symbol until stop blinking, and the touch panel will rotate itself.

One touch blinking symbol adjustment

2. However, 180 ° rotation of touch panel can not be done in one step, user needs to rotate 90 ° twice.

4.2 Rotating display by way of Pivot

There are two ways to rotate the display by way of Pivot.

- Rotating display by way of Pivot hotkey or function menu
- Rotating display by way of RotTray icon provided by TouchKit.

< Rotating display by way of Pivot hotkey or function menu >

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

2. There will be a pivot icon in the task bar. User can click on it, and user can choose four angles " 0˚ , 90 ˚, 180 ˚, 270 ˚ " to rotate the display.

3. After choosing the angle user wants to rotate, there will be one blinking symbol showing as the following picture. Touch this blinking symbol until stop blinking, and the touch panel will rotate itself.

One touch blinking symbol adjustment

4. However 180 ˚rotation of touch panel can not be done in one step, user needs to rotate 90 ˚ twice.

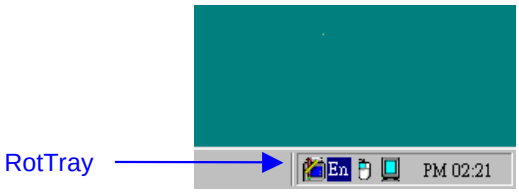
< Rotating display by way of RotTray icon provided by TouchKit>

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

2. For Win9X OS, please go to C:\Program Files\TouchKit, and copy “RotTray.exe” to C:\WINDOWS\Start Menu\Programs\Startup. Then reboot computer.

   For Win 2K/ XP/ XP Tablet PC Edition, please go to C:\Program Files\TouchKit, and copy “RotTray.exe” to C:\Document and setting\All Users\Start Menu\Startup. Then reboot computer.

3. After rebooting, user will see RotTray icon in the task bar.

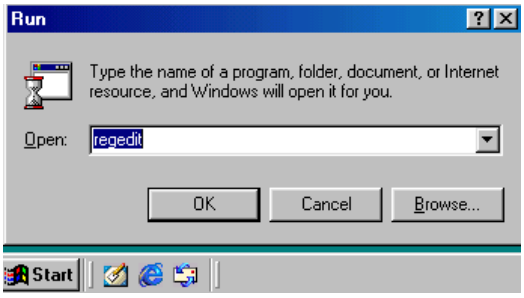


RotTray icon

4. Clicking on RotTray, it will call Pivot to rotate the display and touch panel 90 ° at the same time. Clicking it again, it will rotate another 90 °to 180 °. Every click on RotTray, display will rotate clockwise. Recalibration and one symbol adjustment won’t be necessary anymore.

5. However this version of RotTray is design for Pivot pro 6.05. If user wants to use older version of Pivot, like Pivot 5.1, user needs to amend the value of windows registry. The next step is an example for setting Pivot 5.1 on Win98.

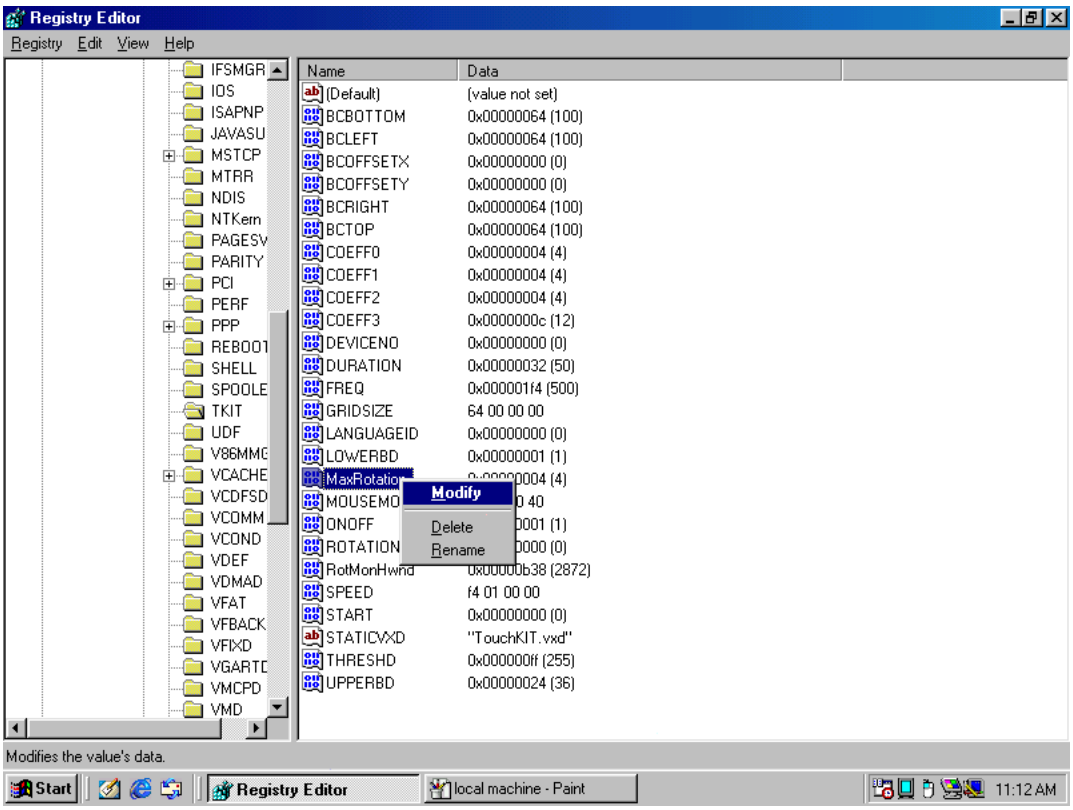
6. Go to Start/Run, and execute regedit.



Press <OK> to execute

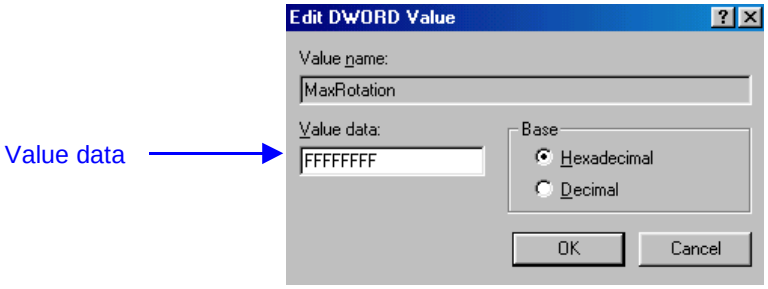
7. For Windows 95/98/ME OS, The Registry Editor will show as the follow picture. Then go to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\VxD\TKIT. Right click on the “MaxRotation”, and choose Modify.

   For Windows 2000/ XP, please go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Touchkit



Right click on MaxRotation to Modify Value data

8. Choosing the Hexadecimal Base, and replace the value data “4 (default)” with “FFFFFFFF”.



Pressing <OK> to confirm.

9. Here bellow are the value data for different version of Pivot:

Version of Pivot	Available Angle	Value Data
Pivot pro 6.05	0 °,90 °,180 °270 °	4 (default)
Pivot 5.1	0 °,-90 °	FFFFFFFF
Other Version	0 °, 90 °	2

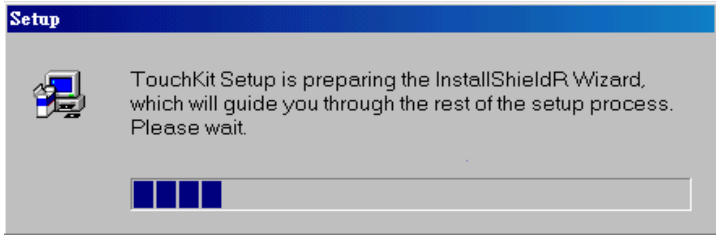
Chapter 5. Uninstalling TouchKit

5.1 For Windows 95 / 98 / ME / NT4 / 2000

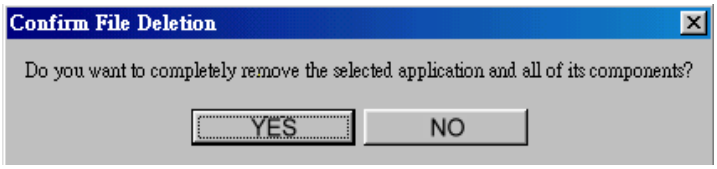
Follow these steps to uninstall ***TouchKit.***
(An example for Windows 98.)

1. Go to **Start / Programs / TouchKit / Uninstall**, and execute it.

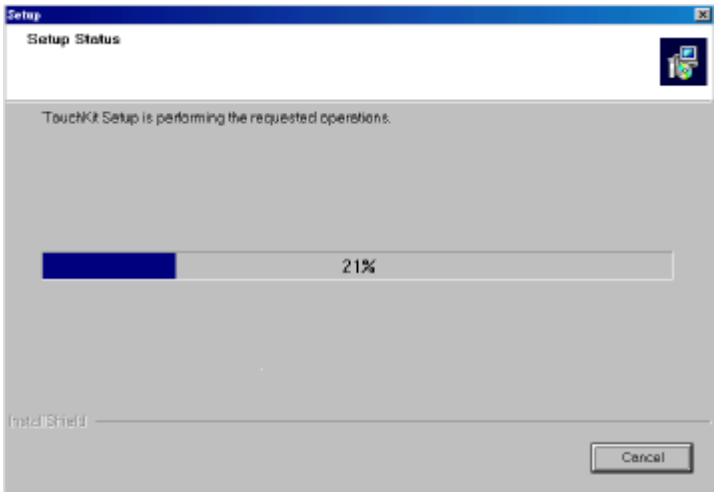
2. TouchKit setup dialog appears, and prepares to uninstall.



3. Confirm dialog, press **[YES]** to start un-installation; **[NO]** to cancel un-installation.

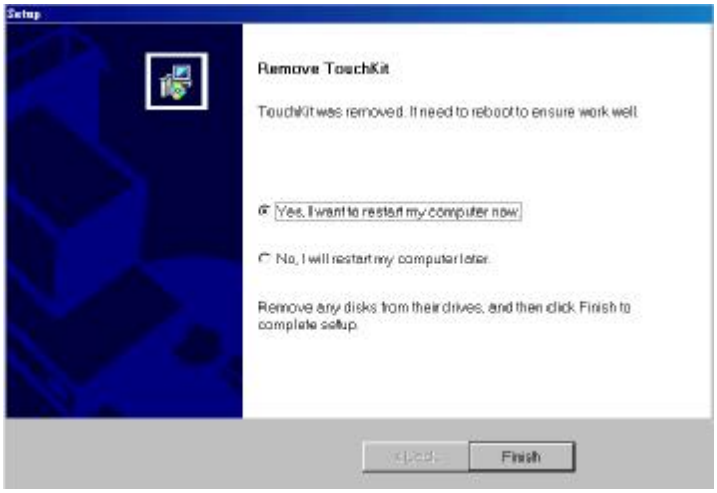


4. Start to uninstall TouchKit.



If user does not want to uninstall TouchKit at this moment, press **[Cancel]** to terminate the uninstall process.

5. TouchKit will not be removed until system re-boot. Press **[Yes>]** to re-boot immediately or **[No>]** to re-boot later.

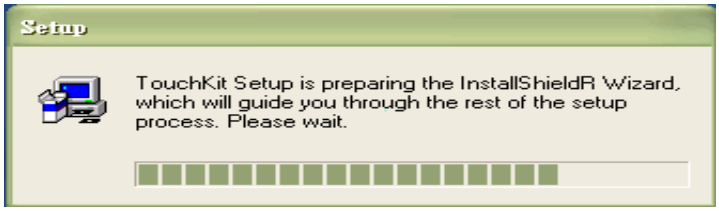


5.2 For Windows XP / XP Tablet PC Edition

Follow these steps to uninstall ***TouchKit.***

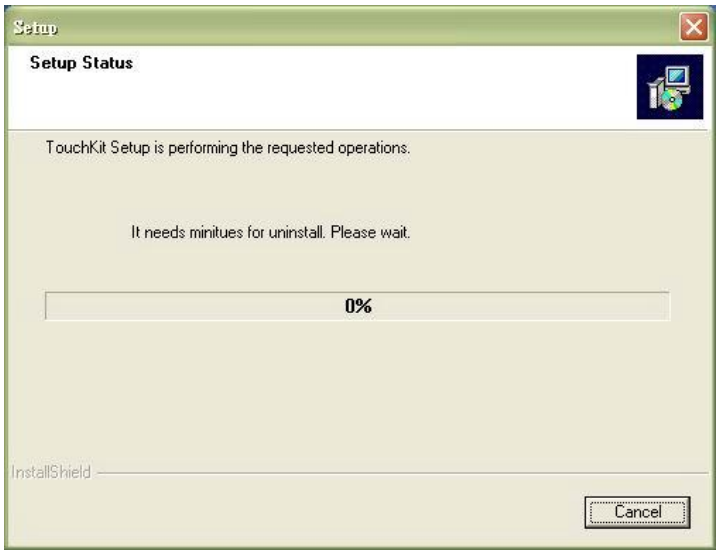
1. Go to S**tart / All programs / TouchKit / Uninstall**, and execute it.

2. TouchKit setup dialog appears, and prepares to uninstall.



3. Confirm dialog, press **[YES]** to start un-installation; **[NO]** to cancel un-installation.

4. Start to uninstall TouchKit.



If user does not want to uninstall TouchKit at this moment, press **[Cancel]** to terminate the uninstall process.

5. TouchKit driver will not be unloaded until system re-boot. Press **[Yes>]** to re-boot immediately or **[No>]** to re-boot later.

5.3 For DOS

Follow these steps to uninstall ***TouchKit.***

For example:

syntax: install <path of destination directory>

```
C:\XYZ>DELTREE TOUCHKIT
Delete directory "touchkit" and all its subdirectories? [yn] y
Deleting touchkit...
C:\>edit autoexec.bat
```

Then delete the following sentence:

```
set path=%path%;C:\XYZ\touchkit
rem Add your own serial port configuration here, ex. SET TKT1=3E8 4
TPANEL.EXE
rem Execute "TPANEL /?" to list options
RCLICK.COM
rem Right Button Tool
```

Reboot computer.

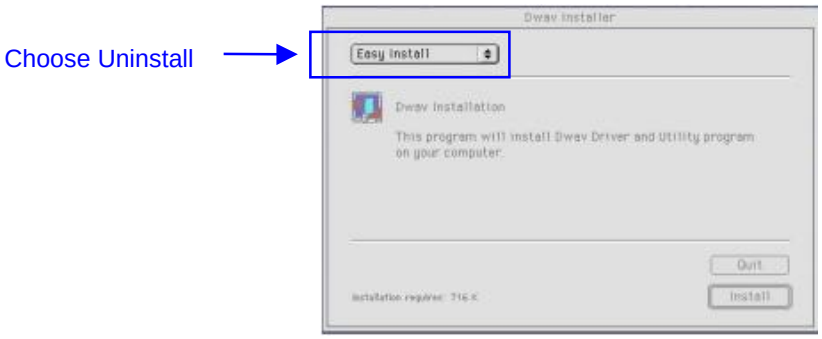
5.4 For Linux

To uninstall TouchKit all user has to do is execute uninstall_TouchKit in text mode.

5.5 For iMac

Follow these steps to uninstall ***TouchKit.***

1. Double click “TouchKit Installer” file first, and choose uninstall. Then press **[Uninstall]** button to continue.



2. Choose TouchKit Folder, then **[Select]** to confirm.

3. Reboot the system.